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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 19

Application Number: 09/748,341
Filing Date: December 22, 2000
Appellant(s): HOLL, EBERHARD

Richard L. Mayer
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on October 14, 2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of the invention is in overall correct. However, examiner would like to request special attention to the specification on page 2, lines 1-4, which says “detecting complete stop denotes the complete-stop instant”. More specifically, according to the specification on page 8, lines 7-17, the present application does not use the vehicle speed and brake pressure to detect the complete stop of the vehicle. Rather, the present application uses the deceleration at the time the vehicle speed reaches from threshold v_1 to threshold v_2 and brake pressure to determine when (the time t_3 in line 9-10) and where (the location s_3) the vehicle will stop.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 2 to 16 and 18-35 should stand or fall together with the independent claims stated in group I because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof See 37 CFR 1.192(c)(7).

(8) Claims Appealed

A substantially correct copy of appealed claims 1-7, 9-36 appears on page 1-7 of the Appendix to the appellant's brief. A minor error is as follows:

In claim 8, line 1, The method according to claim 1” should be corrected to “The method according to claim 2”.

(9) Prior Art of Record

5,129,496	Sigl et al	7-1992
GB 2297619	Masur	08-1996

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 17, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Sigl et al (US 5,129,496).

As per claim 1, 17, and 39, Sigl teaches a method and device for calculating the complete stop instant as a function of the vehicle speed (V_{veh} from box 3 which provides the vehicle deceleration values from box 4 of fig.1) (col.4, lines 18-21; col.2, lines 52-59); Further, since Sigl teaches that the calculating of the complete stop is calculated *at the point in time* the brake

pressure is applied (col. 4, line 21-24) and the calculation can be made *dependent on* the application of the brake (col.4, lines 24-26), and that the application of the brake changes the brake pressure (lines 1-2 of the abstract), moreover, the brake force is actually the brake pressure as admitted in at least claims 11, 29 of the present application, Sigl inherently teaches calculating the instant of complete stop as a function of the vehicle speed and the brake force as claimed.

Claims 2-16, and 18-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sigl et al (US 5,129,496) in view of Masur (GB 2 297 619).

As per claim 2-7, Masur teaches using at least two vehicle speed thresholds v_0 and v_{min} for determining the complete stop of a vehicle when braking occurs (page 1, lines 4-16; page 2, lines 6-12; page 5, lines 5-6), further, with respect to claims 4-7, Masur teaches that the vehicle speed v_{min} should be selected at the point the speed sensor cannot measure the speed of the vehicle wheel (page 1, lines 13-17), moreover, choosing specific vehicle thresholds as a result of observation or experiment for suited values that signify the beginning of the brake and the limit at which the speed sensor cannot measures any more requires only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the two thresholds and the time between the two thresholds of Masui to determine the gradient, which represents the deceleration value v' (of box 4, fig.1; col.2, lines 57-58) of Sigl in order to determine the instant of complete stop according to the average value of vehicle speed to ensure obtaining stable result of the instant of complete stop.

As per claim 8, since Masur teaches determining the gradient, which is known in mathematic as the change in the speed ($v_0 - v_{\min}$) over the time period of the speed change (divided by the time $t_0 - t_N$), Masur obviously teach determining the average deceleration of the claim.

As per claim 9-15, Sigl teaches including the road gradient into consideration (col.3, lines 44-45). Further, using average brake pressure instead of instantaneous brake pressure, and determine the inclination of a road using a look up table having characteristic curves would have been obvious to a person of ordinary skill in the art at the time the invention was made.

As per claim 16, 18-25, refer to claims 1-15 above.

(11) Response to Argument

- a. Issue: in page 6, from “issue 1” through page 8, lines 1-2, the appellant re-presents the claims 1, 17, and 36, which basically claim that the complete stop is detected as a function of braking force and as a function of the vehicle’s speed (or the speed of the vehicle’s wheel). The appellant further pointed out that Sigl et al does not teach or even suggest determining a complete stop of the vehicle as a function of a quantity of braking force. The appellant asserts that the status of a brake pedal represented by the brake light signal (BLS) switch in col.2, lines 63-68 of Sigl is not the quantity representing the braking force recited in claims 1, 17, and 36. The following is the examiner’s answer:

Reply: First at all, the examiner would like to call the attention to the panel that although the specification of the present application page 2, lines 1-2, which implies that the language “detecting the complete stop denotes detecting the complete-stop instant” saves the claims 1, 17, and 36 from 112 2nd paragraph rejection as not clearly define the invention, the claim language “detecting the complete stop as a function of [...] braking force [...] and [...] vehicle speed” is inaccurate and misleading, because the specification page 8, lines 7-18, box 10 (fig.1) of the present application discloses determining the time t_3 at which the vehicle is completely stopped (the speed of the vehicle is zero) by solving for t_3 in the equation: $v_2 + \int_{t_2}^{t_3} (a_H + \beta p_b) dt = 0$. Therefore, the system of the present application does not “use the brake force and vehicle speed to detect the complete stop”, actually the system of the present application uses the brake force and vehicle speed to calculate the time the speed of the vehicle will reach zero (the complete stop). The independent claims themselves also raises a question of validity to the claims if the specification page 2, lines 1-2 and page 8, lines 7-18 is not read, because the claim uses the vehicle speed as a function to detect complete stop of the vehicle! How could a vehicle be called complete stopped when there is still some vehicle speed? Therefore, the expression “detecting complete stop” should be interpreted as “calculating the instant of time the vehicle will completely stop” as denoted in the specification page 2, lines 1-2. And the independent claims 1, 17, and 36 should be read in

light of the specification as “determining the time (or the future location) the vehicle will completely stop using the brake force and the vehicle speed” as disclosed in the specification 2, lines 1-4 and page 8, lines 7-18. With this interpretation in mind, the examiner invites the panel to the reference of Sigl (US 5,129,496). Since in col.4, lines 18-21, Sigl teaches that when the vehicle speed reaches a first threshold ($v_{veh}=10\text{km/h}$), “the measured vehicle deceleration is used to calculate when the vehicle will come to a complete stop”, since the deceleration of the vehicle is determined in the differentiator 4 (fig.1) as a derivative value of the vehicle speed v_{veh} from box 3 (fig.1) (col.2, lines 52-58), Sigl inherently teaches determining the time the vehicle will be completely stop using the vehicle speed as claimed. The more concerned issue is whether Sigl teaches including the brake force in calculating the time the vehicle will completely stop? There are at least two evidences that clearly shows that Sigl does suggests including the brake force (which is analogous to the brake pressure as taught in claims 11, 29 of the present application) in determining the time the vehicle will completely stop:

- i. In col.4, lines 22-23, Sigl teaches “at this calculated point in time, the brake pressure is supplied”, and in col.3, lines 63-68, col.4, lines 1-2, Sigl teaches that the brake pressure is monitored and is adjusted. The teaching in col.4, lines 22-23 in light of the teaching in col.3, lines 63-68, and col. 4, lines 1-2 shows that at the time the calculation of the instant

the vehicle will stop is to be conducted, the brake pressure should be properly controlled. This implies certain effect of the brake pressure in the calculation of the stop instant.

- ii. A stronger evidence that undeniably shows Sigl's suggestion to include brake pressure in calculating the instant the vehicle will stop can be found in col.4, lines 24-26. In col.4, lines 24-26, Sigl suggests "this calculation [...] can be made dependent upon operation of the brake", and in the whole context of the paragraph in col.4, lines 18-26, Sigl clearly means "this calculation" is the calculation of the time the vehicle will completely stop, further in lines 1-2 of the abstract, Sigl teaches the fact that the brake pressure changes according to the operation of the brake pedal (the operation of the brake). Therefore, in light of the teaching in col.4, lines 24-26 and lines 1-2 of the abstract, Sigl does suggest including the brake pressure in determining the time the vehicle will stop. Although Sigl does not elaborate on how the calculation of the time the vehicle will stop would be calculated using both the vehicle speed and the brake force, Sigl's suggestion enough and fully reads on the extremely broad claims 1, 17 and 36.

Concerning the brake light signal switch (BLS), and the brake status of the vehicle as addressed by the appellant in page 7, last 15 lines, although Sigl teaches the brake light signal switch which indicates brake status of the vehicle,

the examiner agrees with the appellant that Sigl does not teach using the status of braking of the vehicle in calculating the time the vehicle will stop. However, the details concerning whether the brake light signal switch (BLS) is used in calculating the time the vehicle will stop is irrelevant because claims 1, 17 and 36 do not mention the relation between status of the brake and the calculation of the time the vehicle will stop. The examiner does not at all rely on the brake status of the vehicle to reject claims 1, 17, and 36.

- b. Issue: In page 8 first paragraph, the appellant refers to col.1, lines 24-36 of Sigl et al saying that Sigl et al states that a complete stop of a vehicle is detected on the basis of a low reference speed v_x ; and refers to col.2, lines 40-45 saying that Sigl teaches that instead of evaluating the speed v_d of the vehicle speed, it is also possible to evaluate the speed v_d of the driven wheel of the speed v_{nd} of the non-driven wheel. V_{nd} replace the speed v_{veh} . The following is the examiner's comment:

Reply: The col.1, lines 24-36 as cited by the appellant does not actually teach determining the time the vehicle will stop as said. The examiner would refer to col.4, lines 17-26; col.3 lines 63-67; lines 1-2 of the abstract to address the independent claims (refer to section a. above). Concerning the cited col.2, lines 40-45, the appellant admits that Sigl teaches that it is obvious to replace vehicle speed with the wheel speed in determining the vehicle stop. Although the limitation "speed of at least one of the vehicle's wheel" is not necessary

considered because it is written in an alternative format “one of the vehicle’s speed and the speed of at least one of the vehicle’s wheels”, with this admission from the appellant, Sigl also teaches the limitation “speed of at least one of the vehicle’s wheel” in the independent claims 1, 17 and 36 as well.

- c. Issue: In page 8, second paragraph, the appellant asserts that Sigl does not teach determining complete stop as a function of braking force and does not even suggest that a complete stop is detected based on the brake light signal (BLS) switch. The following is the examiner’s answer:

Reply: Concerning the issue on determining complete stop as a function of braking force, Sigl does teach determining the time the vehicle will stop as a function of brake force. Please refer to the section a. in the “response to arguments” section above for detailed explanations. Concerning the issue that Sigl does not suggest determining the complete stop based on the brake light signal, the examiner agrees with the appellant that Sigl does not teach determining the complete stop based on the brake light signal. However, the issue of whether the complete stop should be determined based on the switch light signal is irrelevant because the independent claims 1, 17, and 36 do not disclose whether determining complete stop is based on the status of the brake indicated by the switch light signal, and the examiner does not rely on the “brake status” feature in rejecting claims 1, 17 and 36.

- d. Issue: On page 8, last paragraph through page 9 first paragraph, the appellant cites certain case laws and again repeat that Sigl does not disclose detecting complete stop as a function of braking force and as a function of one of vehicle speed and a wheel speed of the vehicle. The following is the examiner's answer:

Reply: To reply to the section, the examiner repeats that Sigl does teach calculating the time the vehicle will completely stop as a function of the brake force and vehicle speed or wheel speed of the vehicle. The examiner asks the panel to refer again to section a. and b. in this "response to arguments" section for detailed explanation.

- e. Issue: On page 9, beginning at "Issue 2" through page 11, first paragraph, the appellant repeats that Sigl does not disclose detecting a complete stop as a function of the braking force as claimed in claim 1, 17, and that Masur does not disclose detecting a complete stop as a function of braking force. Therefore claims 2-16, 18-35 should be allowed as being dependent on claims 1, 17. The following is the examiner answer:

Reply: With respect to the appellant's repetitive argument concerning Sigl's teaching of detecting a complete stop as a function of the braking force, the examiner asserts that Sigl does teach all limitations of claims 1 and 17, and would like to refer the panel to section a. in this "response to arguments" section above for the explanation. The examiner admits that Masur does not teach detecting the

time the vehicle reaches a complete stop using brake force. However, the limitation has been taught in Sigl (refer to section a. in this “response to arguments” section), and the examiner does not rely on Masur to address the issue.

- f. Issue: In page 11, last paragraph through page 14, second paragraph, the appellant asserts that the examiner does not set forth a reason why the combination of references of Sigl and Masur might be made, and that the rejection is only conclusory hindsight. The following is the examiner answer:

Reply: Masur teaches analogous arts with Sigl in the issue of determining the time the vehicle will completely stop. To determine the time the vehicle will completely stop, Masur teaches measuring at least to threshold speed values v_0 and v_N (v_N is the minimum speed threshold at which the speed sensor cannot further measure the speed according to fig.1, and page 1, lines 13-16) and the corresponding time t_0 and t_N at which the speed reaches the thresholds v_0 and v_N (page 5, lines 2-6). Masur teaches using at least the two threshold speed values and their corresponding time values to determine the gradients of the speed values (abstract). It is noted that gradient is rate at which a physical quantity changes relative to change in a given variable (American Heritage Dictionary). Since Masur teaches determining the gradients of speed with respect to the time points (abstract and fig.1), Masur obviously teaches determining the deceleration of the vehicle (since deceleration is the rate of

change of speed with respect to time), this deceleration is the same as the deceleration taught in box 8 (fig.1) and in the specification page 7, line 14 of the present application. Since Sigl teaches determining the vehicle deceleration in box 4 (fig.1), and since Masur teaches determining the deceleration of the vehicle using two speed thresholds, an ordinary person skill in the art would be able to apply the teaching of Masur in determining deceleration of the vehicle of Sigl based on two speed values of Masur in order to facilitate determining average deceleration of a vehicle is any suitable points of speed and instances. Concerning the appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed that the rejections should be sustained.

Application/Control Number: 09/748,341
Art Unit: 3661

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Respectfully submitted,



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December 19, 2003

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